PCT/CA 004/001588

(12) UK Patent Application (19) GB (11) 2 203 571 (13) A

(43) Application published 19 Oct 1988

(21) Application No 8626747

(22) Date of filing 8 Nov 1986

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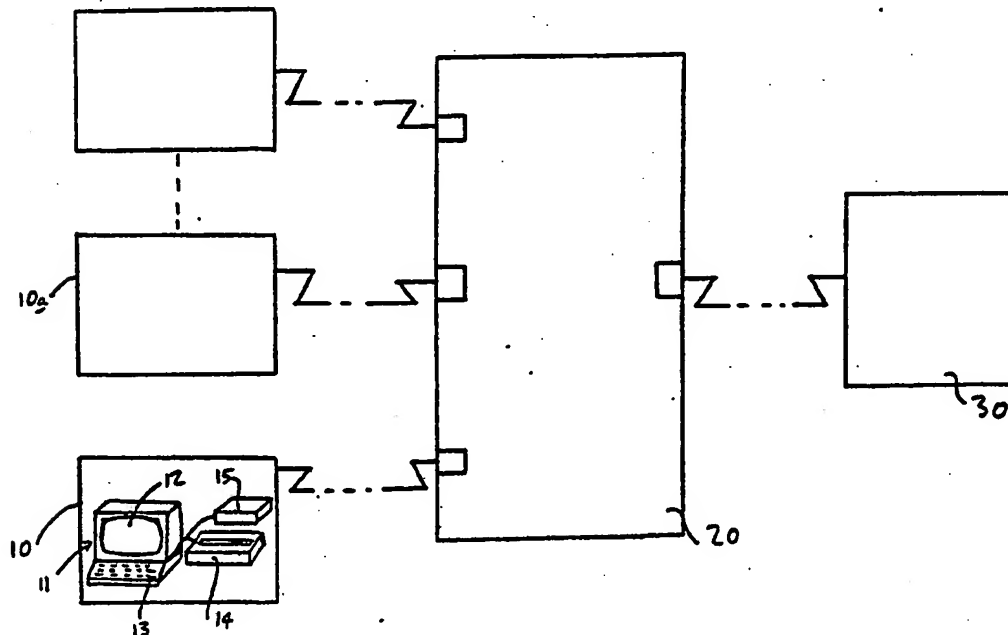Central Milton Keynes, MK9 3BN

(51) INT CL⁴
G06F 13/00

(52) Domestic classification (Edition J):
G4A UD
U1S 2124 G4A

(56) Documents cited
GB A 2078407   EP A 0213276   EP A 0075729
US 4334270

(58) Field of search
G4A
Selected US specifications from IPC sub-class
G06F

(54) Data bank updating system

(57) A data bank update system comprises a plurality of remote computers 11 with respective data banks and respective communications modems 15, and a central administration centre 30 serving to communicate message to electronic mail boxes 20 for the respective remote computers which messages contain alterations for the respective data banks, each remote computer being arranged to retrieve any such message from its electronic mail box and automatically alter its data bank in accordance with the message.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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administration centre or another subscriber to the elec-
tronic mail service, is stored in the user's electronic
mail box until the user calls in the usual way for any
messages stored for him to be forwarded. Then the or
5   each message is forwarded and messages containing updates
to the data bank are acted upon automatically under the
control program of the user's computer. Alternatively
each remote computer may periodically call the electronic
mail box automatically for forwarding of any stored
10   messages and at such time update the data bank.

Each remote computer may also be arranged to
generate messages for sending automatically <u>via</u> the modem
to the electronic mail boxes of other subscribers to the
service or to the telexes of other parties. For example
15   the system may be used for buying goods or services and
the messages may comprise purchase orders. As another
example, the data bank may include a directory of suppliers
of various goods or services and the remote computer may be
programmed to generate automatically invitations to tender
20   for the supply of goods or services. These invitations are
transmitted automatically to the electronic mail boxes or
telexes of the businesses selected to receive the invit-
ations to tender.

Also in accordance with this invention there is
25   provided a computer apparatus comprising a data bank store
and a modem and arranged to call forward any message stored
in an electronic mail box for said apparatus and automatic-
ally update said data bank in accordance with any alter-
ations defined by the message which has been called forward.

30   An embodiment of this invention will now be des-
cribed by way of example only and with reference to the
accompanying drawing, the single figure of which is a
schematic block diagram of a system in accordance with the
invention.

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Referring to the drawing, the system comprises
(for each individual user 10,10a ....) a microcomputer 11
having a monitor 12 and keyboard 13, a printer 14 and a
modem 15. The system utilises electronic mail and a bank
5 of electronic mail boxes is shown diagrammatically at 20.
An administration centre for the system is shown at 30.

The microcomputer 11 of each user stores a data
bank, any item of which can be called to the monitor screen
for information purposes by actuation of the keyboard 13
10 according to conventional principles. The user cannot alter
his data bank directly himself, but the data bank may be up-
dated, changed, deleted or extended in the following manner.
When any alteration of any user's data bank is to be made,
an appropriate message is generated at the administration
15 centre 30 and transmitted to the electronic mail box of the
user or users concerned: this message includes the data
alterations and the addresses in the user's data bank at
which the alterations are to be made. The message is
stored in the user's electronic mail box until the user
20 calls in the usual way for any messages stored for him to
be forwarded: then, the message containing data alterations
is processed by user's microcomputer 11 to alter the data
bank automatically. The forwarding of the message may
occur when the user calls for it using his keyboard 13, or
25 the microcomputer may be programmed to call for the forward-
ing of any messages automatically at predetermined times:
any data-alteration messages are then processed automatic-
ally to update the data bank, and any other messages prin-
ted out or simply stored by the microcomputer for recall
30 subsequently by the user.

Each microcomputer 11 may comprise a general-
purpose microcomputer with the data bank held, for example
together with the program controlling the updating of the
data bank and other functions which will be described, on
35 a disk or on a microchip.

The system so far described thus provides that
each user will have his data bank maintained up-to-date
automatically by the administration centre, the user him-
self having no direct access to alter his own data bank.
5   The nature and contents of the data bank will depend upon
the user's field of business or interest and this is known
at the adminsitration centre for each individual user.
Apart from the functions described, each microcomputer may
also be programmed to analyse and develop statistics rep-
10   resenting the use which the user makes of his data bank.
These statistics show the relative frequencies at which
the user refers to the different sections of his data
bank. Periodically, the microcomputer transmits a message
to the electronic mail box for the administration centre,
15   which message identifies the sender and also contains the
statistics just described. The administration centre
serves to determine from these statistics sections of the
data bank that the user has particular interest in, and
respond by altering the user's data bank accordingly, for
20   example extending the data relevant to that field of
interest and possibly deleting sections of the data bank
for which the user has shown infrequent or no need. In
this way the system provides for a dynamic up-dating of
each user's data bank.
25   Each user's data bank may be used purely as a
store of information, any item of which may be called to
the monitor screen, and/or printed out. In addition or
instead, the data bank may be employed to generate messages
for sending automatically via the modem to the electronic
30   mail boxes of other electronic mail subscribers or to the
telexes of other parties. For example, the system may be
configured for buying goods or services. In this case the
data bank comprises a directory of businesses providing
goods and services relevant to the field of interest of
35   the user. The microcomputer is programmed such that the

user may identify from the directory businesses providing
selected goods or services and then automatically generates
invitations to tender for supply of the goods or services:
these invitations are transmitted automatically _via_ the

5   modem to the electronic mail boxes or telexes of the
businesses which have been identified. These businesses
are able subsequently to prepare their tenders and may
communicate them to the electronic mail box of the user
who invited the tenders.

10   The system may in similar manner be used for placing
purchase orders direct with suppliers of goods or services.
The user's data bank in this case comprises a directory of
suppliers and may also include information on prices etc.
This directory is kept up-to-date in the manner described

15   above and in addition the administration centre may send
any additional messages or information for the attention
of the individual users in a purchasing group. Preferably
each user's microcomputer is programmed so that, upon
communicating an order for goods or services to a supplier,

20   it also communicates a message to the electronic mail box
for the administration centre: this message does not
include all the information given in the order (which
remains confidential between the sender and supplier), but
identifies the sender, the supplier to whom the order has

25   been sent and possibly the size of the order or the items
being ordered. In this way the administration centre is
able to monitor the volume and distribution of business
being conducted.

The system which has been described provides for

30   efficient and automatic updating of a user's data bank.
If this is a business directory used for inviting tenders
to fulfil orders, then these invitations are generated and
transmitted automatically, saving the time-consuming manual
administration exercises of selecting suppliers, preparing

35   letters and mailing the invitations. If the system is used

for placing orders, it carries this out as quickly as
making a telephone call but provides for a printed record
and is quicker and cheaper than sending a written order.

The system may however be used for any situation
5   in which users may benefit from having a data bank which
is automatically updated.

CLAIMS

1. A data bank update system comprising a plurality of remote computers with respective data banks and respective communications modems, and a central administration centre serving to communicate messages to electronic mail boxes

5 for the respective remote computers which messages contain alterations for the respective data banks, each remote computer being arranged to retrieve any said message from its electronic mail box and automatically alter its data bank in accordance with said message.

10 2. A data bank update system as claimed in claim 1, in which each remote computer comprises a microcomputer with monitor and keyboard and arranged so that any item of the respective data bank can be called to the monitor screen by actuation of the keyboard.

15 3. A data bank update system as claimed in claim 2, arranged for any data-altering message to remain stored in the respective electronic mail box until the user calls that mail box.

4. A data bank update system as claimed in claim 1 or
20 2, arranged for each remote computer to call the respective electronic mail box periodically to cause automatic forwarding of any stored messages.

5. A data bank update system as claimed in any preceding claim, in which each remote computer is arranged for genera-
25 ting messages for sending automatically via the respective modem to the electronic mail boxes of other users of the system.

6.   A data bank update system substantially as herein described with reference to the accompanying drawings.

7.   A computer apparatus comprising a data bank store and a modem and arranged to call forward any message stored in an electronic mail box for said apparatus and automatically update said data bank in accordance with any alterations defined by the message which has been called forward.

8.   A computer apparatus as claimed in claim 7 and substantially as herein described with reference to the accompanying drawings.
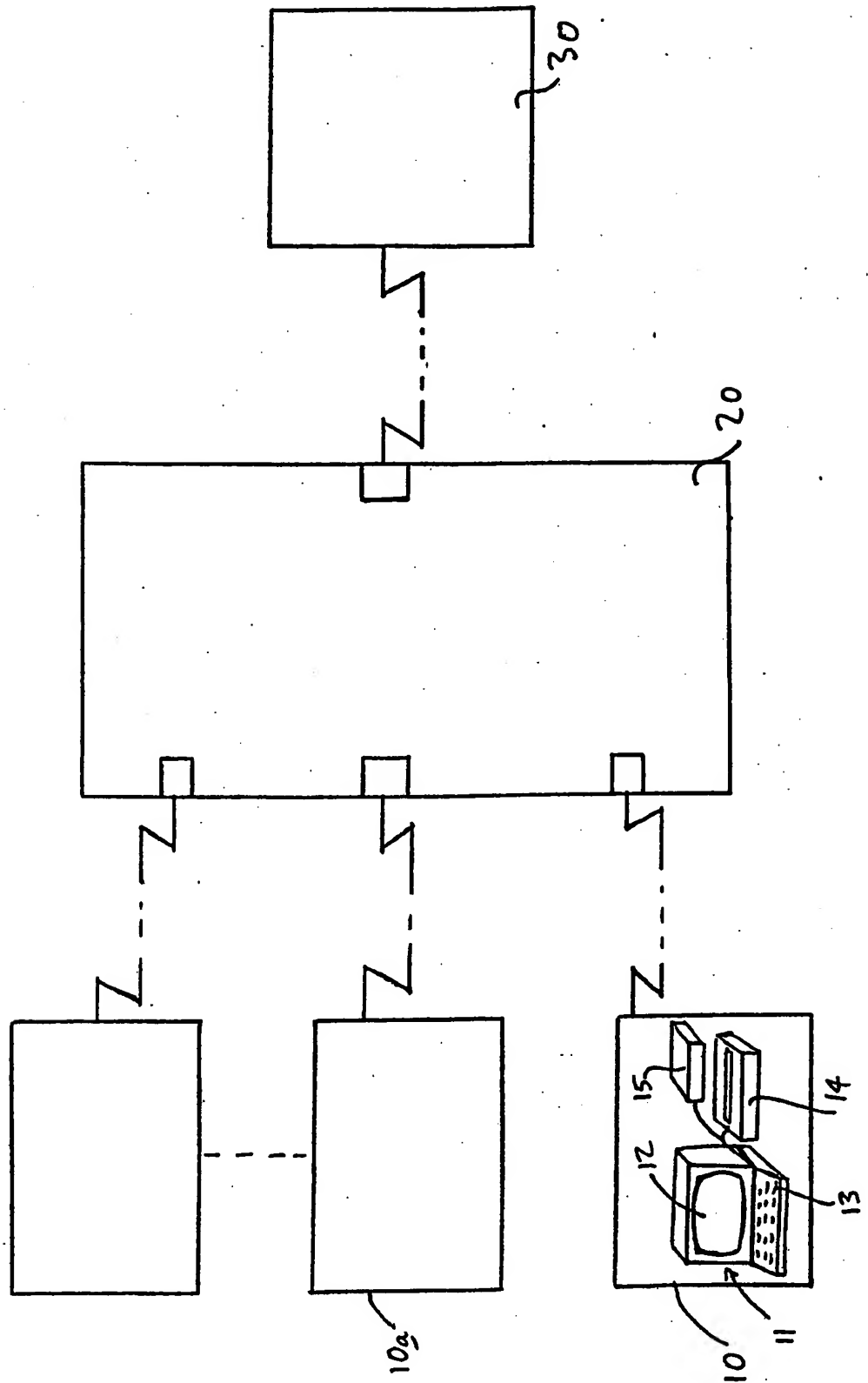
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DATA BANK UPDATE SYSTEM

The present invention relates to a data bank update system.

It is known to provide a data bank of information at a central location and enable remote users to access this central data bank _via_ their own terminal equipment. It is

5 also known for individual users to hold a data bank of information on their own computers. We have now devised an improved system which provides for keeping the contents of each user's data bank up-to-date, using the store-and-forward facility of an electronic mail service.

10 In accordance with this invention, there is provided a data bank update system comprising a plurality of remote computers with respective data banks and respective communications modems, and a central administration centre serving to communicate messages to electronic mail boxes

15 for the respective remote computers which messages contain alterations for the respective data banks, each remote computer being arranged to retrieve any said message from its electronic mail and automatically alter its data bank in accordance with said message.

20 Typically each remote computer may comprise a microcomputer with monitor and keyboard and any item of the data bank can be called to the monitor screen by actuation of the keyboard according to conventional principles. Any data-altering message, and likewise any

25 other message intended for the user whether from the